Cherniaffsky, who has been many years engaged in the study of the fauna of the Black Sea, and now studies especially the influence of the media on organic forms, reported upon his numerous collections of animals from various depths, and traced in them the slow variations which animals of the same species undergo at different depths, and the appearance of new species with the increase of depth; the labours of M. Cherniaffsky promise to be of great interest when published in full.

COLOURS OF ANIMALS.—At the last meeting of the St. Petersburg Entomologists' Society, October 16, M. Porchinsky reported upon some results on the exploration of a scientific party engaged last summer upon the exploration of the Caucasus. The southern limit of the region explored was the Steppe of Erivan, a plain covered with sand, with some patches of variously coloured clays appearing in the low hills. A remarkable feature of the animal inhabitants of the Steppe, insects and reptiles, and especially of the lizards, is the most perfect coincidence of their colouring with the colouring of the Steppe. The same thing was observed also in the Steppe of Elizabethpol. Interesting collections of the fauna made by the party were produced at the meeting.

NOTES

DR. CARL JELINEK, the eminent and accomplished meteorologist, died at Vienna on October 19, after a protracted illness.

THE death is announced, on the 16th ult., of Dr. von Waltershausen, Professsor of Mineralogy and Geology at Göttingen, where he was born in 1809. While young he travelled much, especially in Sicily and Iceland, making large mineralogical collections, which he presented to the university. He is specially known for his researches in connection with volcanic phenomena. During his later years he was engaged in a large work on the topography and orography of Etna.

PROF. H. J. S. SMITH'S valedictory address to the London Mathematical Society, on the 9th inst., will touch upon various points affecting the present state and prospects of pure mathematics.

THE popular German poet and mineralogist, Prof. von Kobell, has just celebrated, in Munich, the fiftieth anniversary of the day on which he was appointed extraordinary professor of mineralogy in that city.

DR. RÖNTGEN has been appointed extraordinary Professor of Physics in Strasburg University.

DR. CARPENTER, F.R.S., Secretary to the Gilchrist trust, has, for the special benefit of the Primary Teachers of the Metropolis, arranged for a course of lectures to be given by Dr. Richardson, F.R.S., at St. Thomas Charterhouse Schools, on Human Physiology, and its application to daily life. The course will be opened on Friday, November 3, by Dr. Carpenter, delivering an address on a Sound Mind in a Sound Body.

WILLIAM CLARKE MILLER, B.A. Lond., vice-principal of Huddersfield College, has been elected Registrar of the General Medical Council of Education in the place of Dr. Erasmus Hawkins, resigned. The new Registrar has been long known as an able mathematician.

IT is stated by the *Medical Press and Circular* that the Goldsmith's Company has voted a sum of 1,000*l*. to the Chemical Society to aid in the formation of the fund to be devoted to the promotion of original research in the science of chemistry.

M. WADDINGTON, the intelligent Minister of Public Instruction in France, has come to a most liberal decision on behalf of the Paris Observatory. According to the standing financial rules used in France, no adjudicator of works executed in the public interest is entitled to be paid except when his task has been completed and received. As an exception, M. Leverrier is authorised to pay in advance to the opticians and philosophical instrument makers a sum amounting to one-third of the total value.

THE Bischofsheim transit instrument, which has been so long delayed by the red-tapeism of the Finance Department, is almost finished, and observations will very shortly be inaugurated in the new pavillion which has been built on an improved scheme for its reception.

M. FEIL, the glass-worker of Paris, has just finished the casting of the crown-glass lens for the great Vienna refractor. The diameter is 28 inches and the weight 112 pounds. It will be sent immediately to Mr. Howard Grubb, of Dublin, who already possesses the flint lens.

THE course of lectures at the Sorbonne for candidates for the *licence* and pupils of the Normal Schools was opened a few days since. In former years the lecturers were confined to merely elementary subjects relating to mechanics, classics, astronomy, differential and integral calculus. But this year M. Bonnet lectures on the recent discoveries in high geometry, and M. Puiseux on a subject which has been largely discussed by men of science in England, the figure that the earth must have taken owing to its fluidity.

WITH exception of the schools of Paris, which rank among the first in the world, most of the faculties of sciences and *lettres* in France (says M. Grad in *La Nature*) have only five professors. Now there were a hundred and thirty-five at the University of Berlin, seventy at the University of Königsberg, against three hundred and forty-eight in all the faculties of the fifteen academical divisions of France in 1870. The faculty of sciences and that of *lettres* of Strasburg, more favoured than others, had then thirteen professors, against thirty-six in the faculty of philosophy and sciences of the present University. The University at present has a total of eighty professors distributed among the five faculties of theology, law, medicine, philosophy, and natural and mathematical sciences. This year Prussia devotes to the maintenance of its nine universities 6,577,397 marks, of which 4,820,841 marks are furnished from the State Treasury. With regard to population, the expenditure per head of inhabitants is 0·70 fr. in Alsace-Lorraine, 0·12 fr. in France, 0·33 fr. in Prussia.

A COMMITTEE appointed by the Russian Government at the St. Petersburg Medical Academy to investigate various proposed antiseptics and disinfectants, have arrived at the following conclusions:—1. Carbolic acid is the most efficient means against the development of ammoniacal gas, putrescence, and development of lower organisms in organic matter under decomposition, and it is therefore the best antiseptic. 2. Vitriol, salts of zinc, and charcoal, are the best means for deodorising matter under putrefaction. 3. The powders of Prof. Kittary, besides the properties they share in common with other carbolic disinfectants, deserve attention because of the isolated state of phenol in them and their contents of quick-lime, which absorbs moisture—the principal condition of each kind of putrefaction—as also some part of the gases. 6. Chloride of lime and permanganate of potash quickly destroys the lower organisms in putrid liquids. 7. The disinfectants certainly retard the putrid processes in organic bodies, but their influence is only temporary, as a means of purifying air in dwellings their influence is very small if not totally *nil*, because of the very small degree of concentration of their ingredients that can be used without injuring the health of inhabitants. 9. For uninhabited buildings the best disinfectants are nitrous acid and chlorine.

Referring to our recent correspondence on "Antedated Books," a correspondent calls attention to another evil practice that has of late years crept into the publishing trade, namely, that of publishing books without any date at all. Our correspondent mentions two firms that sin extensively in this respect; but there are several others, especially in what is known as the "number trade," who of *malice prepense* publish undated books. Such books are generally of small literary or scientific value, but circulate among a class who are generally unable to test their value. Of course the purpose of issuing undated books is evident; works half a century old may be palmed off on the unknowing as the genuine product of the current year.

We understand that Dr. A. Wojeikoff, of St. Petersburg, has arrived at Singapore from Batavia on his way to Japan, on what may be truly characterised as a meteorological tour, at his own expense, over the whole civilised world. The tour was begun upwards of seven years ago, when the greater part of Europe was visited, and after a return to and brief residence in Russia, was again resumed through the United States, extending as far as Manitoba, and thence southwards through South America, and onwards to the East India Islands. Those who have had the pleasure of meeting him know that this tour means a large amount of meteorological work, in the prosecution of which he has made prolonged sojourns in different regions with the view of familiarising himself practically with their meteorology and with the steps which have been taken towards its investigation. The training which this able meteorologist is giving himself well deserves our warmest commendation.

As being somewhat analogous to the above, it may be notified that Dr. Hamberg, meteorological assistant to Prof. H. Hildebrandsson, of Upsal University, is at present engaged on a year's tour through Europe for the purpose of familiarising himself with the systems of meteorological research pursued in different countries, funds for the purpose having been provided by the Upsal University. This is real professional education, and deserves to be carried out more extensively and in a more Catholic spirit than has yet been done by our British Universities.

We have received from Prof. Dove the *Monatliche Mittel für Druck, Temperatur, Feuchtigkeit, und Niederschläge und fünftägige Wärmemittel* for 1875. In addition to the usual meteorological results, this admirable annual serial gives the five-day means of temperature for the year and their departure from the means of the twenty years ending 1867, and the same for ten Austrian, thirteen Swiss, and twenty-four Italian stations, thus presenting in a clear manner the temperature conditions of Germany, and their relations to those of immediately surrounding regions during 1875. The results of the observations made at the Forest-stations of Bavaria and additional rain returns are also given, together with a most valuable *résumé* of the monthly amounts of rainfall observed at all stations in Germany during the past five years, and monthly and annual averages of rainfall calculated from all the past observations at each place as are available. The latitude, longitude, and height of the Austrian, Swiss, and Italian stations are stated, and we very earnestly hope that, with next issue, Prof. Dove will be able to give the data for his stations in Germany, the want of which is felt to be a serious omission in nearly all discussions of German meteorology.

In a paper in this month's Petermann's *Mittheilungen* Prof. H. Fritz treats of the Geographical Distribution of Hail. He refers to our comparative ignorance of the origin and peculiarities of the appearance of hail, of the want of long series of observations on the subject, and in those that do exist of the frequent confounding of hail and graupel—the balls of true hail having an icy structure, whereas the balls of graupel are only small pellets of snow. The latter he shows falls in all latitudes and at all heights; while hail is mainly confined to middle latitudes. In high latitudes and in tropical valleys, hail is a rare phenomenon. Prof. Fritz brings together for comparison observations on the subject made in various quarters of the globe, the statistics being, as might be expected, fullest in the case of Europe. The following are some of his conclusions from these data:—He infers that hail occurs whenever the moisture of the atmosphere is precipitated in very great quantity as rain or snow, and that hail phenomena correspond to the amount of this excess of precipitation. With increase in latitude and in height the fall of graupel increases and that of hail decreases, while hailstones of large size are most frequent towards the equator. But since in the low lands of the tropics hail is little known, the regions of the most frequent and especially most destructive hailstorms belong to the middle latitudes, while in high and low latitudes hail-falls of large stones are exceptional. It appears then that no region in which an excessive rainfall occurs is secure against hailstorms, if only the height of fall is sufficient to allow of the formation of hail. In high latitudes and in high table-lands the vertical distances to the atmospheric strata with temperature below zero are small, and therefore more snow and graupel will fall than hail, while in middle and low latitudes this distance, especially in summer, is great enough to allow of the formation of large hailstones. North and south of the zone of calms the hail-fall becomes more frequent and reaches its maximum between 40° and 60° of latitude. The currents of the atmosphere and the formation of the land-masses have also an influence on the distribution of hail. A satisfactory solution of the hail question can, however, only be obtained by complete series of observations, the details for each station being given separately, and the distinction between true hail and graupel being attended to.

The German Society for Arctic Exploration (Bremen) has just heard from Drs. Finsch and Brehm. They speak of the most difficult part of their journey from the Ob to the Kara Sea through a hitherto quite unknown region, which they performed partly in boat, partly by reindeer, and partly on foot, over the Tundras. The knowledge obtained by the expedition in this region is an important contribution to the geography of West Siberia. The collections with reference to the ethnology of the Samoyeds and Ostiaks are especially valuable, as also the specimens of birds and fishes. The travellers expected to be home by the beginning of this month.

Prof. James Orton, of Vassar College, U.S., has nearly completed his preparations for the exploration of the river Beni, a little known tributary of the Madeira River, the largest affluent of the Amazon. Prof. Orton sums up the special objects of the survey as follows: 1. To solve some of the most interesting and important geographical problems of the day. 2. To search for the traces of the ancient military roads, probably built by the Inca Yupanqui when he invaded that region. 3. To open up the trade of the eastern slope of the Andes with the United States. In Prof. Orton's opinion, the search for the source of the Nile, while of not greater interest than that of the Beni, is of very much less commercial value.

In a paper on "The Climate Controversy," published in the two last numbers of the *Geological Magazine*, Mr. Searles V. Wood, jun., discusses the possible cause of the latest changes of climate experienced by the earth. The aim of Mr. Wood is less to advocate some special solution of the question than to insist on the difficulties which beset all the theories hitherto offered as a solution, and which are (1) a decrease in the original heat of our planet; (2) changes in the obliquity of the ecliptic; (3) the combined effect of the precession of the equinoxes and of the excentricity of the earth's orbit; (4) changes in distribution of land and water; (5) changes in the position of the earth's axis; (6) a variation in the amount of heat radiated by the sun; and (7) various temperatures of those regions of space through which the solar system has moved. Discussing each of them, Mr. Wood deals at greater length with the theory advocated by Mr. Croll, arriving at the conclusion that, although the influence of geographical conditions and currents is a powerful agent in modifying climate, nevertheless the cause of the Glacial period must have been a cosmical one; that the cold of this period seems to have fallen upon the earth while its axis was in its present position; and that nothing has yet been found to raise a doubt as to the glaciation of the northern and southern hemispheres having been synchronous. Mr. Wood inclines to admit that it is to the sixth suggested cause, a diminution in the heat emitted by the sun, that the probabilities incline. The discussion of the geological facts connected with the latest changes of climate is the main attraction of the paper of Mr. Wood.

CAPT. ALLEN YOUNG's Arctic ship *Pandora* is back again, all well. It will be remembered Capt. Young went out to endeavour to communicate with the Arctic expedition, which he met on its road home.

TWO shocks of earthquake were felt at Irkutsk and its neighbourhood, on August 31 at 10 P.M., and on September 4 at 1.30 A.M. Both extended over a large region, and the last was rather strong at Irkutsk.

Two earthquakes are reported as having occurred in Germany on October 14, the one near Kehl at 11 A.M., and the other at Schopfheim between 8.30 and 9 P.M. The former extended over Strasburg, Kehl, Kork, Auerheim, Zierolshofen, Leutesheim, Linz, Diersheim, Rhein-Bischofsheim; the direction was apparently in a south-west-north-east direction. There were three or four shocks lasting about four seconds. The other earthquake was to the north of Schopfheim, at Neuenweg and Gresgen, and was of shorter duration than the former; the direction was apparently north-south.

THE African explorer, Eduard Mohr, writes to Dr. Nachtigal, under date August 28, of his arrival at St. Paul de Loanda. Within eight days he was to proceed to Malange, on the eastern limit of Angola, which he was to make his base of operations for an exploring journey to the northern interior.

IN the Geological Section of the Helvetic Society of Sciences, besides many interesting smaller communications, the following larger contributions to geological science were made:—The results of a thorough exploration of the earlier geological history of the Black Forest and of the Vosges, by Prof. Sandberger; the results of explorations in the Argovian Jura, by Prof. Muhlberg; the results of explorations by M. Mœsch in the Bernese Alps, accompanied by a map of the mass of the Faulhorn and of its neighbourhood; a map on the scale of 1:250,000 of the glacial deposits of Switzerland, with full particulars as to the former extension of glaciers, their depths, slopes, &c., made by Prof. Favre; and a very detailed map, on a scale of 1:5,000, of the glacier of the Rhone, with all its moraines, moulins, crevices, &c., constructed by M. Gosset, at the charge of the Swiss Alpine Club.

AT the same meeting Prof. Sandberger presented his work "Land- und Süsswasser-Conchylien der Vorwelt." The terrestrial and fresh-water molluscs are described here in these geological succession, beginning from the oldest formations. Being very abundant in the Tertiary deposits, they have, as is known, much contributed to settle the classification of these deposits.

AT the *conversazione* of the Chester Society of Natural Science held last month, Mr. Cross exhibited some specimens of *Drosera rotundifolia* which had been grown in Mr. Siddall's fern case, and which presented characters differing greatly from those of the typical plant. The axis had elongated considerably and bore a number of alternate leaves, quite green, with aborted tentacles, and several of them showing buds produced on the mid-rib. Some of the old leaves of the original plants placed in the case for preservation also exhibited the phenomenon last named.

WE have received from Dr. C. A. MacMunn an account of the method he proposes for measuring and comparing different spectra with the spectrum microscope. In order to overcome the difficulties due to the difference in the dispersion of different prisms, he proposes to look upon the distance between the Fraunhofer lines B and E as equal to 100, and to express the position of all bands in relation to this scale. We, however, think that it is very desirable not to multiply the already too numerous arbitrary scales of this kind, and would strongly advise him and all others who are studying this subject, to express their results in terms of wave lengths, since, as Mr. Sorby has argued, that system alone has a true physical basis.

THE Bethnal Green Museum is becoming just now a great centre of attraction to the multitudes from the numerous interesting collections illustrative of art and science now deposited together. The former speak to the eye for themselves, although the Secretary of the Department has taken care to provide admirable historical and descriptive cheap catalogues. But the scientific and industrial collections require more carefully prepared aids for study, and these are now being furnished by the Department in illustrated manuals, published at a cheap price, written by eminent authors, and on these no expense has been spared to make them thoroughly practical and useful treatises upon the subjects on which they treat. Messrs. Chapman and Hall, we are informed will publish immediately for the Council of Education and Department of Science, three of these works—"Food, its Chemical Constituents and Uses," by Mr. A. W. Chunt, F.C.S., Professor at the Royal Agricultural College, Cirencester; "Economic Entomology," by Mr. Andrew Murray, F.L.S., and "Animal Products, their Preparation, Commerce, and Uses," by Mr. P. L. Simmonds.

THE additions to the Zoological Society's Gardens during the past week include a Cape Hyrax (*Hyrax capensis*) from South Africa, presented by Mr. J. M. Thornton; an Ocelot (*Felis pardalis*) from Honduras, presented by Mr. H. Fielding; two Norwegian Lemmings (*Lemmus norvegicus*) from Norway, presented by Mr. W. Duppa Crotch; a Common Hangnest (*Icterus vulgaris*) from South America, presented by Mr. J. T. Levett; an African Cobra (*Naia haje*) from South Africa, presented by the Rev. G. H. R. Fisk; a Vervet Monkey (*Cercopithecus lalandii*) from South Africa, deposited; two Indian Cobras (*Naia tripudians*) from India, received in exchange; a Merlin (*Hypotriorchis æsalon*), European, purchased.

SEXUAL SELECTION IN RELATION TO MONKEYS

IN the discussion on Sexual Selection in my "Descent of Man," no case interested and perplexed me so much as the brightly-coloured hinder ends and adjoining parts of certain monkeys. As these parts are more brightly coloured in one sex than the other, and as they become more brilliant during the season of love, I concluded that the colours had been gained as a sexual attraction. I was well aware that I thus laid myself open to ridicule; though in fact it is not more surprising that a monkey should display his bright-red hinder end than that a peacock should display his magnificent tail. I had, however, at that time no evidence of monkeys exhibiting this part of their bodies during their courtship; and such display in the case of birds affords the best evidence that the ornaments of the males are of service to them by attracting or exciting the females. I have lately